

REMARKS

Claims 3, 5-8, 12 and 14-25 are pending in the present application. Among these, claims 14-24 have been withdrawn from consideration as being directed to a non-elected invention. Claims 3, 5-8, 12 and 25 have been rejected.

The election with traverse of Group I (original claims 1-13, now claims 3, 5-8, 12 and 25) has been made FINAL by the Examiner. The applicant reserves the right to file one or more divisional applications on the subject matter of the non-elected claims pursuant to 37 CFR 1.142(b). Claims 14-24 are withdrawn from further consideration as being directed to a non-elected invention.

Accordingly, claims 3, 5-8, 12 and 25 are presented for examination herein.

Claims 25, 3, 5-8 and 12 are rejected under 35 USC 102(b) as being anticipated by Menzies et al, cited on pages 397-402 of Occup. Environ. Med. 1999, Vol. 56. Claims 25, 3, 5-8 and 12 are rejected under 35 USC 103(a) as being unpatentable over the Menzies paper and over WO 01/87364 (IDS reference) and the Osawa paper (IDS reference). These rejections are respectfully traversed. Reconsideration and withdrawal thereof are requested.

(1) Features of the present invention

As is apparent from the current independent Claim 25, the wind tunnel includes therein a passage, through which air containing microorganisms flows from one end side (the microorganism supply means) to the other end side (the microorganism sampling means). Utilizing the passage, a series of processes comprising irradiating particles containing ions into the passage for eliminating microorganisms and sampling microorganisms can be carried out along one pass. Accordingly, compared with the case of determining the effect of ions by sampling in a broad space, when the wind tunnel is employed, the distribution of ions and

microorganisms inside the wind tunnel varies little, so that the results of the sampling do not vary and highly-reproducible experiments are to be expected. Besides, the place of reaction between particles (ions) and microorganisms is specified, and hence the validity of sampling is clarified.

(2) Technical differences between the present invention and the prior art citations

(A) The cited Menzies et al. paper recites that in order to test whether installation and operation of germicidal ultraviolet (GUV) lights in central ventilation systems would be feasible, ultraviolet lights from three different manufacturers were installed in the ventilation systems serving three floors of an office building. However, only ultraviolet lights are employed as a sterilizing means. There is no description therein referring to sterilizing means other than ultraviolet lights. Thus, Menzies does not suggest sterilizing means using ions in the present invention. That is, the present invention is not anticipated by Menzies et al. under 35 USC 102(b). Furthermore, there is no description therein referring to sterilizing means other than ultraviolet lights, so that it would be difficult for those skilled in the art to obtain the idea of using other sterilizing means such as ions according to the present invention, in lieu of ultraviolet light energy and ultrasonic wave energy. Moreover, in Menzies et al., “three floors of a downtown office building” are used for performing the sterilizing test and subsequent evaluation test, wherein each floor with a wide space is used as a laboratory. Hence, in the Menzies citation, the sterilizing effect is not evaluated by means of a “a wind tunnel inside a container” as described in the present invention, and this citation does not suggest a method for the evaluation of the sterilizing effect by means of such “a wind tunnel” as described in the present invention as well. Accordingly, in the case of performing the evaluation test for the sterilizing effect using the method described in Menzies, it would be difficult to expect that the results of the sampling do not vary and that highly-reproducible experiments are attained. As a result, the inventive steps of the present invention cannot be denied by the Menzies citation.

(B) As to the cited WO 01/87364 (US2003/0072675) reference, the Examiner states that this citation teaches a method for evaluating the elimination of microbial cells with an ion generating device in an air conditioning system. However, in the cited '364 reference, there is no suggestion of a method for evaluating the elimination of microorganisms utilizing such "a wind tunnel" as described in the present invention.

(C) The Osawa citation (IDS reference) recites a method for evaluating the elimination of microbial cells in bacterial and viral mist aerosols after a sterilizing treatment with air purifiers. In the column "Outline of the experiment" of "Results of Prof. Taguchi's experiment", there is clearly described as follows:

The experiment was performed on a filter air purifier, and an ionic air purifier that included the present air purifiers. A mist containing aerosol *Staphylococcus aureus* (microorganism) and a coxsackie virus was blown into an acrylic box with the volume of one cubic meter. In two conditions, that is, where the air purifiers were operated and where they were not operated, the numbers of particle size by the particle size in the air of the experiment box were detected and the amount of *Staphylococcus aureus* (microorganism) and the coxsackie virus was measured. The amounts of genes of *Staphylococcus aureus* (microorganism) and the coxsackie virus attached to the ceiling and the floor of the experiment box and the dust collecting paper of the air purifiers were measured. Next, a similar experiment was performed on an influenza virus and the number of its genes was measured.

However, Osawa's evaluation of elimination is conducted in an acrylic box with the volume of one cubic meter, while in the current invention such evaluation of elimination is performed using a wind tunnel inside a container. In Osawa's case, the evaluation of elimination is directed to air purifiers, wherein the method of air purifying is such that dust in the air is

charged by negative ions and the charged dust is then absorbed by Coulomb's force into an air filter (a dust collection paper). Thus, it is our understanding that Osawa's method for evaluation of elimination is related only to evaluating the eliminating effect of dust in the air using an air filter. Furthermore, Osawa does not suggest using "a wind tunnel" as described in the present application. In conclusion, Osawa would not be able to attain such a technical effect as in the present invention in which "a wind tunnel" is used for evaluating the elimination of microorganisms.

(D) Rose et al. (USP 6,171,548) recites a method and apparatus for sterilizing organic or inorganic matter through simultaneous exposure to ultraviolet light energy and ultrasonic wave energy. However, there is no indication therein suggesting using ions as a sterilizing means. Furthermore, the citation recites a method and apparatus for sterilizing with a combination of ultraviolet light energy and ultrasonic wave energy, so that it would be difficult for those skilled in the art to obtain the idea of using ions as a sterilizing means instead of ultraviolet light energy and ultrasonic wave energy.

In addition, the air sterilization unit 84 delineated in col. 9-10 and Fig. 7 of the citation is not comprised of such "a wind tunnel" as indicated in the present invention. The air sterilization unit 84 consists of nothing but a sterilization chamber, typically sized for 150 cfm, 250 cfm, 450 cfm, and 600 cfm rated capacities. Thus, it would be difficult to expect the evaluation results of the eliminating effect attained in the present invention. Accordingly, this citation does not deny the inventive step of the present invention.

(E) As described heretofore, it is apparent that neither the novelty nor the inventive step of the present invention could be denied by the references cited by the Examiner. The claims under consideration are not anticipated by the cited Menzies paper. In addition, there is no teaching, suggestion or motivation for combining the references as proposed by the Examiner absent hindsight taken from the applicant's own disclosure. Thus, it is clear that the references, taken alone or in combination, fail to teach the applicant's claimed invention. It is submitted that the

invention as claimed is not obvious to one skilled in the art, and that the claims should be passed to issue.

With respect to the comment made by the Examiner concerning the references cited in the Information Disclosure Statement (IDS) in the Office Action dated May 29, 2009, the applicant hereby notes that the references not supplied are cumulative to references already considered during the course of prosecution in this case.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Raymond C. Stewart Reg. No. 21,066 at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§1.16 or 1.17; particularly, extension of time fees.

Dated: August 31, 2009

Respectfully submitted,

By 

Raymond C. Stewart
Registration No.: 21,066
BIRCH, STEWART, KOLASCH & BIRCH, LLP
8110 Gatehouse Road
Suite 100 East
P.O. Box 747
Falls Church, Virginia 22040-0747
(703) 205-8000
Attorney for Applicant